or several rotating reaction vessels and that the means (6) for heating the contents of the reaction vessels operate at a temperature significantly higher than the melting temperature of the reaction vessels.

--18. (new) The device according to claim 17, **characterized** in that the heating means (6) bring hot air in contact with the reaction vessels, the temperature of said hot air being in the interval of 200 to 800 °C.

--19. (new) The device according to claim 17, **characterized** in that the heating means (6) comprise a mantle which can be moved in relation to the rotational path of the reaction vessels.

--20. (new) The device according to claim 17, **characterized** in that the cooling is effected by using a coolant gas or air.

--21. (new) The device according to claim 17, **characterized** in that the heating means (6) comprise an IR-lamp.

--22. (new) The device according to claim 17, **characterized** in that the means for measuring the temperature comprises an temperature sensor (7), the measuring focus of which intersects the rotation path of the apices of the reaction vessels.

--23. (new) The device according to claim 17, **characterized** in that the means for measuring the temperature comprises a temperature sensor placed in one reaction vessel.

--24. (new) The device according to claim 17, **characterized** in that it comprises a radiation source (8) emitting a ray of radiation which intersects the rotation path of the apices of the reaction vessels and a sensor (9), capable of registering at least one of the following; light reflected from the reaction vessels, light emitted by the contents of the reaction vessels.

--25. (new) The device according to claim 24, **characterized** in that the radiation source (8) is a laser source.

--26. (new) The device according to claim 24, **characterized** in that the sensor (9) registering the reflected light from the rotating reaction vessels sends a signal to a processor (4) which controls the speed of the rotor.

--27. (new) The device according to claim 24, **characterized** in that the sensor registering the reflected light from the rotating reaction vessels sends a signal to a processor (9) which controls the measuring frequency of the temperature sensor.

--28. (new) The device according to claim 17, **characterized** in that said rotor (1) for holding at least one reaction vessel is chosen among the following: a drum rotor, a swing-bucket rotor and a fixed angle rotor.

--29. (new) The device according to claim 17, **characterized** in that the reaction vessel is chosen among the following: a micro tube, an Eppendorf-tube or a well in a microtitre plate.

--30. (new) The device according to claim 17, **characterized** in that a telecentric lens is positioned between the heating source and the reaction vessel or reaction vessels.

--31. (new) The device according to claim 17, **characterized** in that it comprises means for reading information contained on or in association to the reaction vessels.

A2

--32. (new) A method for performing chemical reactions in fluid media contained in reaction vessels, **characterized** in that said method comprises the following steps:

i) at least one reactant is measured into a reaction vessel,

ii) said reaction vessel with contents is placed in a device capable of subjecting it

to centrifugation, heating, and cooling;

iii) said reaction vessel is subjected to centrifugation; and

iv) said the reaction vessel is subjected to alternating heating and cooling.

--33. (new) The method according to claim 32, **characterized** in that at least one reactant is added using a capillary or similar device, which only releases its content upon centrifugation.

--34. (new) A method for performing chemical reactions in fluid media contained in reaction vessels, **characterized** in that a device according to claim 17 is used.

--35. (new) A method for performing biochemical reactions involving thermocycling, **characterized** in that a device according to claim 17 is used.